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DIALOG(R)File 351:Derwent WPI

012424415 **Image available**
WPI Acc No: 1999-230523/ **199920**
XRAM Acc No: C99-067950

Method for melting fine-grained, directly reduced iron in an electric arc furnace

Patent Assignee: METALLGESELLSCHAFT AG (METG); MG TECHNOLOGIES AG (MGTE-N)
Inventor: EICHBERGER H; SCHIMO S; STROEDER M; WELLS W
Number of Countries: 030 Number of Patents: 012
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
DE 19744151	A1	19990408	DE 1044151	A	19971007	199920	B
WO 9918245	A1	19990415	WO 98EP6276	A	19981002	199922	
AU 9910291	A	19990427	AU 9910291	A	19981002	199936	
DE 19744151	C2	19990819	DE 1044151	A	19971007	199937	
ZA 9809098	A	20000628	ZA 989098	A	19981006	200037	
EP 1025267	A1	20000809	EP 98952689	A	19981002	200039	
			WO 98EP6276	A	19981002		
BR 9812880	A	20000808	BR 9812880	A	19981002	200044	
			WO 98EP6276	A	19981002		
AU 734802	B	20010621	AU 9910291	A	19981002	200141	
KR 2001024408	A	20010326	KR 2000703643	A	20000404	200161	
MX 2000003480	A1	20001101	MX 20003480	A	20000407	200163	
EP 1025267	B1	20011128	EP 98952689	A	19981002	200201	
			WO 98EP6276	A	19981002		
JP 2001519473	W	20011023	WO 98EP6276	A	19981002	200202	
			JP 2000515036	A	19981002		

Priority Applications (No Type Date): DE 1044151 A 19971007
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
DE 19744151	A1		5	C21C-005/52	
WO 9918245	A1 G			C21C-005/52	
Designated States (National): AU BR ID JP KR MX RU TT UA US					
Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE					
AU 9910291	A			C21C-005/52	Based on patent WO 9918245
DE 19744151	C2			C21C-005/52	
ZA 9809098	A		14	C21B-000/00	
EP 1025267	A1 G			C21C-005/52	Based on patent WO 9918245
Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE					
BR 9812880	A			C21C-005/52	Based on patent WO 9918245
AU 734802	B			C21C-005/52	Previous Publ. patent AU 9910291 Based on patent WO 9918245
KR 2001024408	A			C21C-005/52	
MX 2000003480	A1			C21C-005/52	
EP 1025267	B1 G			C21C-005/52	Based on patent WO 9918245
Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE					
JP 2001519473	W		16	C21B-013/12	Based on patent WO 9918245

Abstract (Basic): **DE 19744151** A1

NOVELTY - During operation of the furnace (1), directly reduced iron is fed from above into the foam slag layer (9) through at least one movable lance (6).

USE - For production of liquid iron out of sponge iron, hot-briquetted iron and steel scrap.

ADVANTAGE - Energy savings are achieved in comparison with known practices.

DESCRIPTION OF DRAWING(S) - The drawing shows a furnace for

implementation of the proposed method.
Bath for liquid iron and foam slag (2)
Furnace lid (3)
Electrode (5)
Lances (6)
Liquid iron (8)
Foam slag (9)
pp; 5 DwgNo 1/4
Title Terms: METHOD; MELT; FINE; GRAIN; REDUCE; IRON; ELECTRIC; ARC; FURNACE
Derwent Class: M24; Q77
International Patent Class (Main): C21B-000/00; C21B-013/12; C21C-005/52
International Patent Class (Additional): C21B-011/08; F27B-003/08; F27B-003/18
File Segment: CPI; EngPI

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DIALOG(R)File 351:Derwent WPI

011425982 **Image available**
WPI Acc No: 1997-403889/ **199738**
Related WPI Acc No: 1997-403890; 1997-403891
XRAM Acc No: C97-130429
XRPX Acc No: N97-335701
Treating steel in the course of its production in a metallurgical furnace - with carbonic-acid gas used as transport gas for blowing solids into the furnace
Patent Assignee: EISENBAU ESSEN GMBH (EISE-N)
Inventor: BUJANG F; FINCK L; SMEGAL H; WIRYOMIJOYO H
Number of Countries: 001 Number of Patents: 002
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
DE 19608530	A1	19970814	DE 1008530	A	19960306	199738	B
DE 19608530	C2	19990114	DE 1008530	A	19960306	199906	

Priority Applications (No Type Date): DE 1004663 A 19960209
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
DE 19608530	A1		4	C21C-005/52	
DE 19608530	C2			C21C-005/52	

Abstract (Basic): DE 19608530 A
The method concerns treatment of steel in the course of its production in a metallurgical furnace. Solids are blown into the furnace by means of a transport gas. Pure CO2 gas or a gas containing primarily CO2 is used as the transport gas. Also claimed is a metallurgical furnace, in particular, an electric-arc furnace serving for implementation of the proposed method.
USE - In the metallurgical industry.
ADVANTAGE - Sufficient amounts of slag foam are produced. Lowering of the steel quality as a consequence of transport gases used in blow-in systems is avoided.
Dwg.1/1
Title Terms: TREAT; STEEL; COURSE; PRODUCE; METALLURGICAL; FURNACE; CARBONIC; ACID; GAS; TRANSPORT; GAS; BLOW; SOLID; FURNACE
Derwent Class: M24; Q77
International Patent Class (Main): C21C-005/52
International Patent Class (Additional): C21C-005/32; F27B-003/08; F27B-003/22
File Segment: CPI; EngPI

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DIALOG(R)File 351:Derwent WPI

010246431 **Image available**
WPI Acc No: 1995-147686/199520
XRAM Acc No: C95-068559
Iron@ melt prodn. - with sequential introduction and programmed melting of different iron-bearing charge materials
Patent Assignee: DEUT VOEST-ALPINE IND ANL GMBH (VEOS); VOEST-ALPINE IND ANL GMBH (VEOS)
Inventor: DIMITROV S; PIRKLBAUER W; RAMASEDER N; SCHUBERT H
Number of Countries: 012 Number of Patents: 005
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
AT 9400064	A	19950315	AT 9464	A	19940114	199520	B
EP 663450	A1	19950719	EP 95890010	A	19950112	199533	
AT 400247	B	19950915	AT 9464	A	19940114	199543	
EP 663450	B1	20000105	EP 95890010	A	19950112	200006	
DE 59507543	G	20000210	DE 507543	A	19950112	200015	
			EP 95890010	A	19950112		

Priority Applications (No Type Date): AT 9464 A 19940114
Cited Patents: DE 3609923; EP 240485; FR 2611876; GB 2088904; US 2382534; US 4514218
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
AT 9400064	A		25	C21C-005/52	
EP 663450	B1	G		C21C-005/56	
Designated States (Regional): AT BE CH DE DK ES FR GB IT LI NL SE					
DE 59507543	G			C21C-005/56	Based on patent EP 663450
EP 663450	A1	G	17	C21C-005/56	
Designated States (Regional): AT BE CH DE DK ES FR GB IT LI NL SE					
AT 400247	B			C21C-005/52	Previous Publ. patent AT 9400064

Abstract (Basic): AT 9400064 A
The method concerns production of iron melts, in particular steel out of iron-bearing charge materials (22,29) in a metallurgical vessel (1) with the aid of energy supplied at least partially by a electric arc. A part of the material (22) is introduced into the vessel to form a cone in its central region. A central crater is melted into this cone. The crater is filled with a part of the material (29), which is then melted to produce a crater. This is followed by complete melting of the still solid materials (22,29) before a tapping operation. The plant is provided with separate shafts (21,27) for the iron-bearing charge materials (22,29).
USE - In the metallurgical industry.
ADVANTAGE - The method ensures better utilisation of energy, lower thermal loading of the metallurgical vessel, and shortening of the process times. (Reissue of the entry advised in week 9516 based on complete specification).
Dwg.1/6
Title Terms: IRON; MELT; PRODUCE; SEQUENCE; INTRODUCING; PROGRAM; MELT; IRON; BEARING; CHARGE; MATERIAL
Derwent Class: M24; Q77
International Patent Class (Main): C21C-005/52; C21C-005/56
International Patent Class (Additional): F27B-001/02
File Segment: CPI; EngPI

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DIALOG(R)File 351:Derwent WPI

007008642
WPI Acc No: 1987-008639/ **198702**
XRAM Acc No: C87-003249
Mfg. steel in an arc furnace - by feeding reducing agent and reduced

material through central channel in electrode and scrap via side entrance
Patent Assignee: ASEA AB (ALLM)
Inventor: EKMAN W; LANDGREN N I; STICKLER H
Number of Countries: 004 Number of Patents: 005
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
DE 3621323	A	19870108	DE 3621323	A	19860626	198702	B
JP 62004813	A	19870110	JP 86148368	A	19860626	198707	
SE 8503221	A	19861229				198708	
CN 8604384	A	19861224				198750	
SE 452990	B	19880104				198803	

Priority Applications (No Type Date): SE 853221 A 19850628
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
DE 3621323	A		4		

Abstract (Basic): DE 3621323 A

Steel with an adjustable carbon content is produced in a DC arc furnace by feeding highly reduced material in powder and/or pellet form together with slag formers and reducing agents through the central channel of an electrode. Scrap is fed in via (4) and the ratio of reducing agent to reduced material is controlled to produce a required end carbon content.

USE/ADVANTAGE - To produce steel with C-content of 0.1-0.4 wt.%. The whole process including low C steel production is carried out in this way.

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Title Terms: MANUFACTURE; STEEL; ARC; FURNACE; FEED; REDUCE; AGENT; REDUCE; MATERIAL; THROUGH; CENTRAL; CHANNEL; ELECTRODE; SCRAP; SIDE; ENTER
Derwent Class: M24
International Patent Class (Additional): C21B-013/12; C21C-005/52
File Segment: CPI

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DIALOG(R)File 351:Derwent WPI

004211865
WPI Acc No: 1985-038745/ **198507**
XRAM Acc No: C85-016727
XRPX Acc No: N85-028801
Electric arc and reduction furnaces - fitted with retractable chute for flux charging
Patent Assignee: MANNESMANN AG (MANS)
Inventor: KONIG H; STARK H
Number of Countries: 002 Number of Patents: 003
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
DE 3326505	A	19850207	DE 3326505	A	19830721	198507	B
NO 8402671	A	19850218				198514	
DE 3326505	C	19860619				198625	

Priority Applications (No Type Date): DE 3326505 A 19830721

Abstract (Basic): DE 3326505 A

The flux charging unit can supply a metered charge of powdered ore and limestone flux to the molten metal bath of the electric furnace. The charge is deposited in a controlled manner through a retractable, cylindrical chute, immediately above the surface level of the molten bath so minimising the possibility of excessive dust generation. The chute is retracted clear of the furnace bath after chargint to avoid overheating.

USE/ADVANTAGE - The charging unit is partic. designed to handle flux charges to electric arc or electric redn. furnaces using finely ground or pulverised materials. The method of contg. the dust generated

during charging prevents overloading of the furnace gas cleaning system.

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Title Terms: ELECTRIC; ARC; REDUCE; FURNACE; FIT; RETRACT; CHUTE; FLUX; CHARGE
Derwent Class: J09; M24; Q77
International Patent Class (Additional): F27B-003/18
File Segment: CPI; EngPI

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DIALOG(R)File 351:Derwent WPI

001826133
WPI Acc No: 1977-47126Y/ **197727**
Electric arc furnace charging - through central water cooled funnel in roof terminating above arc zone
Patent Assignee: EVERTZ E (EVER-I)
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
DE 2556714	A	19770630				197727	B

Priority Applications (No Type Date): DE 2556714 A 19751217

Abstract (Basic): DE 2556714 A

An electric arc furnace for a granular or pelletised charge of iron sponge, lime, etc. has above the arc zone a charging tube which protrudes into the furnace space. In the case of a three-phase furnace, this tube is arrange in the centre of the furnace roof and terminates at a distance above the arc which is determined by the angle of repose of the charge.

This allows a continuous charge instead of the intermittent basket charge with the roof removed or through the side door. Damage to the electrodes by material sliding on the crater sides is eliminated and the electrode burn up more uniformly.

Title Terms: ELECTRIC; ARC; FURNACE; CHARGE; THROUGH; CENTRAL; WATER; COOLING; FUNNEL; ROOF; TERMINATE; ABOVE; ARC; ZONE
Derwent Class: J09; L02; M24; Q77; X25; X26
International Patent Class (Additional): F27B-014/00; H05B-007/18
File Segment: CPI; EPI; EngPI

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DIALOG(R)File 351:Derwent WPI

000657112
WPI Acc No: 1969-50934Z/ **196800**
Electric arc melting - of bulk solids with high iron content
Patent Assignee: IRSF (IRSF)
Number of Countries: 003 Number of Patents: 003
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
FR 1481142	A					196800	B
BE 695680	A					196801	
DE 1533922	B	19720824				197235	

Priority Applications (No Type Date): FR 55979 A 19660401
Derwent Class: M24
International Patent Class (Main): C21C-005/52
File Segment: CPI